

REMARKS

Claims 9 and 26 have been cancelled without prejudice. Claims 1, 10, 17, 18, 27 and 34 have been amended. Claims 1-8, 10-25, and 27-34 are pending in the application. Claims 1-34 stand rejected under 35 U.S.C. §112, ¶ 2, as indefinite. Claims 18-34 stand rejected under 35 U.S.C. §101 as directed to non-statutory subject matter. Claims 1-5, 8-11, 15-22, 25-28, and 32-34 stand rejected under 35 U.S.C. § 103(a) as obvious in view of U.S. Patent No. 5,381,349 to Winter et al. ("Winter") and U.S. Patent No. 7,076,119 to Takemoto ("Takemoto"). Claims 6 and 23 stand rejected under 35 U.S.C. §103(a) as obvious in view of Winter, Takemoto and U.S. Pub 2004/0267854 to Haider et al. ("Haider"). Claims 7 and 24 stand rejected under 35 U.S.C. §103(a) as obvious in view of Winter, Takemoto, Haider and U.S. Patent No. 6,157,735 to Holub ("Holub"). Claims 12 and 29 stand rejected under 35 U.S.C. §103(a) as obvious in view of Winter, Takemoto and U.S. Pub 2005/0088534 to Shen et al. ("Shen"). Claims 13 and 30 stand rejected under 35 U.S.C. §103(a) as obvious in view of Winter, Takemoto and U.S. Patent No. 6,076,964 Wu et al. ("Wu"). Claims 14 and 31 stand rejected under 35 U.S.C. §103(a) as obvious in view of Winter, Takemoto and U.S. Patent No. 5,398,076 Lum et al. ("Lum").

Applicant has amended the specification and claims 1, 10, 17, 18, 27 and 34, and respectfully requests reconsideration of pending claims 1-8, 10-25, and 27-34 in light of these amendments and the following remarks.

Rejection of Claims under 35 U.S.C. § 101

The Examiner rejected claims 18-34 as directed toward non-statutory subject matter, arguing that the specification discloses that the recited "machine-readable medium" may be a propagated signal, which is not patentable subject matter. The applicant has amended independent claims 18 and 34, and respectfully traverses the rejection in view of these amendments.

The specification discloses that the invention can be implemented as "a computer program tangibly embodied in an information carrier, e.g., in a machine-readable storage device or in a propagated signal." *Specification* at 21:6-8. Thus, the specification discloses that program storage in a propagated signal is an *alternative* to program storage in a machine-

readable storage device or machine readable medium. To make clear that claims 18 and 34 are directed to program storage in a statutorily permissible machine readable medium rather than a propagated signal, the applicant has amended claims 18 and 34 to recite program storage on a machine readable storage device. Again, as disclosed in the specification, machine readable storage devices are alternatives to propagated signals, and include magnetic disks, optical disks, magneto-optical disks, EPROM, EEPROM, flash memory, internal or external hard drives or removable disks, CD-ROM, DVD-ROM and similar type storage devices. In view of these amendments, applicant submits that claims 18-34 are directed to patentable subject matter.

Rejection of Claims under 35 U.S.C. § 112

The Examiner rejected claims 1, 17, 18 and 34 as indefinite for lacking antecedent basis for reciting "the color information." The applicant respectfully disagrees. Claims 1, 17, 18 and 34 recite computer implemented methods and computer program products for adjusting "the color information of an image." One of skill in art would recognize that an image inherently possesses color information. Consequently, the recitation of "an image" in claims 1, 17, 18 and 34 provides sufficient antecedent basis for recitation of "the color information of the image" in these claims. *See, e.g.,* MPEP § 2173.05(e) ("Inherent components of elements recited have antecedent basis in the recitation of the components themselves"). *See also, Bose Corp. v. JBL, Inc.*, 274, F.3d 1354, 1359, 61 USPQ2d 1216, 1218-19 (Fed. Cir. 2001) (holding that recitation of "an ellipse" provided antecedent basis for "the major diameter of said ellipse" because ellipses inherently have major diameters.)

The Examiner rejected claims 2 and 19 as indefinite for lacking antecedent basis for the recitation of "the immediately preceding limitation." The applicant respectfully disagrees. Claims 1 and 18 respectively recite an iterative computer implemented method ("iteratively, until a termination flag is set") and a computer program product embodying that method. Claims 2 and 19 recite that "in an iteration other than the first iteration, the first power law function is the second power law function that was fit to the auxiliary function in *the immediately preceding iteration.*" (emphasis added). The recitation in these claims of "an iteration other than the first

iteration” provides proper antecedent basis for “the immediately preceding iteration.” As noted in the response filed on June 20, 2007, in any iterative procedure, one or more iterations can follow the first iteration. In any such iteration (*i.e.*, in “an iteration other than the first iteration”), the immediately preceding iteration is well-defined. Thus, in the 2nd, 3rd or 4th iterations, all of which are examples of “an iteration other than the first iteration,” *the immediately preceding iteration* is the 1st, 2nd or 3rd iteration, respectively, and is uniquely defined by the recited “an iteration other than the first iteration.” As such, recitation of “an iteration other than the first iteration” provides proper antecedent basis for “the immediately preceding iteration.” *See, e.g., MPEP* § 2173.05(e); *see also, Bose Corp. v. JBL, Inc.*, 61 USPQ2d 1216, 1218-19 (Fed. Cir. 2001).

The Examiner rejected claims 9 and 26 as indefinite for lacking antecedent basis for the recitation of “the power law function” and “that modifying parameter.” The applicant has cancelled claims 9 and 26, rendering this rejection moot.

Rejection of Claims under 35 U.S.C. § 103

The Examiner rejected claims 1-5, 8-11, 15-22, 25-28, and 32-34 as obvious in view of Winter and Takemoto. The applicant has amended independent claims 1, 17, 18 and 34, and traverses the rejection in view of these amendments and the comments below.

Independent claims 1 and 18 recite computer implemented methods and computer program products for adjusting the color information of an image by modelling a non-linear transfer function with a power law function, comprising “generating an auxiliary function from the transfer function and local differences between the transfer function and the first power law function; [and] fitting a second power law function to the auxiliary function.” The Examiner principally relies on Winter to reject the claims, arguing that Winter discloses “receiving a first power law function and a second power law function.” *Office Action* at 5. But the claims don’t recite *receiving* a second power law function. Instead, they recite “*generating an auxiliary function* from the transfer function and local differences between the transfer function and the first power law function; [and] *fitting a second power law function to the auxiliary function.*”

The Examiner subsequently admits that Winter, in fact, fails to disclose these limitations. *See, Id.* at 6. However, he then argues that these limitations are disclosed by Takemoto, which he alleges discloses “determining differences between curves (col. 8, lines 19-20) and using ‘curving fitting’ method (col. 8, lines 15-16).” *Id.*

It's not clear to the applicant exactly what Takemoto discloses, or on what basis the Examiner believes Takemoto cures the deficiency in Winter. Takemoto appears to disclose separately fitting the regions A, B and C of the transfer curve shown in FIG. 3A with the curves labeled ‘a’, ‘b’ and ‘c’ shown in FIG. 3B, and then matching up the coefficients of the fitted regions to produce a single continuous curve that approximates the curve shown in FIG. 3A. However, the disclosure in Takemoto, which is repeated below, is far from clear:

In this embodiment, the image processing condition setting unit 41 respectively corrects a highlight portion (a portion shown by A), an intermediate portion (shown by B), and a shadow portion (shown by C) of the tone correction curve. More specifically, as shown in FIG. 3B, the highlight portion, the intermediate portion and the shadow portion are subjected to curve fitting by using curves a, b, and c representing quadratic functions respectively having peaks in the respective portions. By correcting a coefficient that is multiplied with a difference between each of the curves a, b, and c and a line d representing $Y=X$, each of the portions of the curve is corrected.

Takemoto at 8:9-20. Clearly, Takemoto discloses something about curve fitting and finding the difference between curves, as the Examiner alleges, but Takemoto's disclosure, in addition to being incredibly vague, doesn't seem to satisfy the limitation of “generating an auxiliary function from the transfer function and local differences between the transfer function and the first power law function; [and] fitting a second power law function to the auxiliary function,” as recited in the claims. Which curve is the transfer function? Which is the first power law function? Which is the auxiliary function? Where does Takemoto disclose generating an auxiliary function from a transfer function and a first power law function? Where does he disclose fitting one?

In short, given the vagueness of Takemoto's disclosure, the Examiner has failed to explain where Takemoto discloses the admittedly missing limitations in Winter, why Takemoto is relevant to the patented invention, or most importantly, why it would be obvious to combine Takemoto's obscure disclosure with Winter to render the claims obvious. The applicant notes that "[t]he examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness." *MPEP* §2142. Moreover, the references relied upon by the Examiner "must expressly or impliedly suggest the claimed invention or the examiner *must present a convincing line of reasoning* as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references." *Ex parte Clapp*, 227 USPQ 972, 973 (Bd. Pat. App. & Inter. 1985). This, the Examiner has failed to do. Consequently, claim 1 and 18 are patentable over the combination of Winter and Takemoto for at least this reason. See *MPEP* §2142. *In re Oetiker*, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992).

Moreover, claims 1 and 18 have been amended to recite "calculating a modelling error from the second power law function and the transfer function, wherein the modelling error is obtained from a plurality of differences between the second power law function and the transfer function." The Examiner alleges the transfer function in Winter is one of the functions 32, 60, 62 or 64 shown in FIGS. 4-7, and that the first and second power law functions are others of these functions. See *Office Action* at p. 5. But, as explained above, none of the functions 32, 60, 62 or 64 identified by the Examiner to be the second power law function was obtained by "generating an auxiliary function from the transfer function and local differences between the transfer function and the first power law function; [and] fitting a second power law function to the auxiliary function," as recited in the claims. Nonetheless, each of these power law functions has a gamma value associated with it, and the Examiner argues that finding a difference between these single gamma values constitutes "calculating a modelling error from the second power law function and the transfer function." But as disclosed in the specification, and as now explicitly recited in claims 1 and 18, the modelling error "is obtained from a plurality of differences between the second power law function and the transfer function." For example, the modelling error can be the maximum error between the two functions over a plurality of data points. See,

e.g., *Specification* at 12:1-6. The Winter reference shows no such modelling error based on a plurality of differences – just a single difference in gamma values. Thus, the combination of the Winter and Takemoto references fail to disclose this limitation as well, and the claims are patentable over this combination for at least this reason.

Claims 17 and 34, like claims 1 and 18, recite computer-implemented methods and computer program products implementing methods for adjusting the color information of an image by modelling a non-linear transfer function with a power law function. The principal difference between claims 17/34 and claims 1/18 is that the latter recite “generating an auxiliary function from the transfer function and local differences between the transfer function and the first power law function; [and] fitting a second power law function to the auxiliary function,” whereas the former recite “reflecting the first power law function about the transfer function to generate an auxiliary function; [and] fitting the auxiliary function with a second power law function.” As before, the Examiner fails to disclose where or how the Takemoto reference discloses “reflecting the first power law function about the transfer function to generate an auxiliary function; [and] fitting the auxiliary function with a second power law function.” Therefore, the Examiner has failed to establish a *prima facie* case that claims 17 and 34 are obvious in view of the combination of Winter and Takemoto.

Moreover, as before, claims 17 and 34 have been amended to recite “calculating a modelling error from the second power law function and the transfer function, wherein the modelling error is obtained from a plurality of differences between the second power law function and the transfer function.” The Winter reference fails to disclose calculating a modelling error from a plurality of differences between what the Examiner identifies as the transfer function and the second power law function. Thus, the combination of the Winter and Takemoto references fail to disclose this limitation as well, and claims 17 and 34 are patentable over the combination for at least these reasons.

Claims 2-16 and 19-33, depend from and contain all the limitations of claim 1 and 18, respectively. While the Examiner rejected these claims under various combinations of references, he relies on the combination of Winter and Takemoto to disclose “generating an

Applicant : James J. Estrada
Serial No. : 10/777,566
Filed : February 11, 2004
Page : 16 of 16

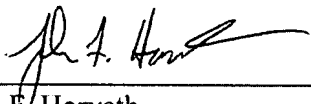
Attorney's Docket No.: 07844-620001 / P351N

auxiliary function from the transfer function and local differences between the transfer function and the first power law function; fitting a second power law function to the auxiliary function," and "calculating a modelling error from the second power law function and the transfer function, wherein the modelling error is obtained from a plurality of differences between the second power law function and the transfer function." For the reasons explained above, the combination of Winter and Takemoto fail to disclose these limitations. Consequently, claims 2-16 and 19-33 are patentable over the combination of Winter and Takemoto for at least these reasons.

Claims 1-8, 10-25, and 27-34 are believed to be in condition for allowance, which action is kindly requested. No charges are believed due, however, please apply any applicable charges to deposit account 06-1050.

Respectfully submitted,

Date: 11/7/07



John F. Horvath
Reg. No. 47,663

Customer No. 21876

11026712